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IS 11943-1 (1987): Hard Metal Burrs, Part 1: Technical Supply Conditions [PGD 32: Cutting tools]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR
HARD METAL BURRS

PART 1 TECHNICAL SUPPLY CONDITIONS

1. **Scope** — Covers the different types and the general requirements of hard metal burrs of solid construction or brazed shank.

2. **Types** — The types of hard metal burrs shall be as given in Table 1.

3. **Material**

3.1 *Brazed Shank* — Suitable carbon steel with tensile strength not less than 700 MPa.

3.2 *Hard Metal Burr Carbide Portion* — Shall be of a range of application suitable for the particular workpiece material as specified by the purchaser according to IS : 2428-1964 'Application of carbides for machining, range of application and colour code'.

4. **Dimensions and Tolerances**

4.1 *Cutting Diameter*

All dimensions in millimetres.

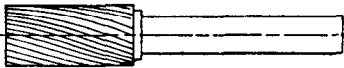
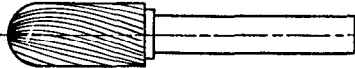
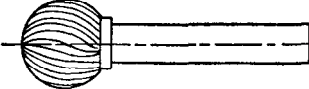
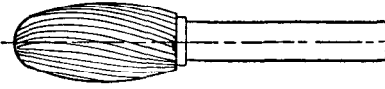
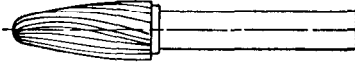
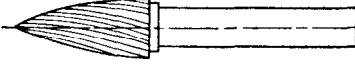
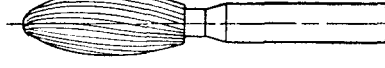
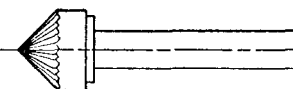
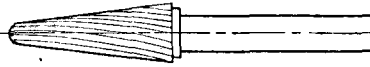
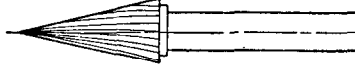
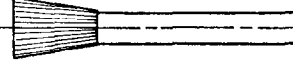
Cutting Diameter	Tolerances
2	± 0.1
3 4 6 8 10	± 0.2
12 16	± 0.3

4.2 *Cylindrical Shank*

All dimensions in millimetres.

Shank Diameter h9	Shank Length
3	25
6	32
8	40

TABLE 1 TYPES OF HARD METAL BURRS
(*Clauses 2 and 6.1.1*)

LETTER SYMBOL	TYPE	FIGURE
A	CYLINDRICAL BURR	
C	CYLINDRICAL ROUND-(BALL-) NOSE BURR	
D	SPHERICAL BURR	
E	OVAL BURR	
F	ARCH ROUND-(BALL-) NOSE BURR	
G	ARCH POINTED-NOSE BURR	
H	FLAME BURR	
J	60° CONE BURR	
K	90° CONE BURR	
L	CONICAL ROUND-(BALL-) NOSE BURR	
M	CONICAL POINTED-NOSE BURR	
N	INVERTED CONE BURR	

4.3 Relation Between Cutting Diameter and Shank Diameter

All dimensions in millimetres.

Cutting Diameter	Shank Diameter		
2	3	—	—
3	3	6	—
4	3	6	—
6	3	6	—
8	—	6	—
10	—	6	—
12	—	6	—
16	—	6	8

5. Direction of Flute Helix and Direction of Cut — Shall have right hand helix and right hand cut unless otherwise specified. Burrs of types J and K may also be straight fluted.

6. Designation**6.1 Symbols**

6.1.1 Symbols for type of burr — Shall be as given in Table 1.

6.1.2 Symbol for the cutting diameter — Shall be the numerical value of the cutting diameter in millimetres. Single digit values shall be preceded by a zero.

Example:

Symbol for cutting diameter 6 mm — 06

Symbol for cutting diameter 12 mm — 12

6.1.3 Symbol for cutting part length — Shall be the numerical value of the cutting part length in millimetres ignoring decimals. Single digit values shall be preceded by a zero.

Example:

Symbol for cutting part length 5.2 mm — 05

Symbol for cutting part length 10 mm — 10

6.1.4 Symbol for tooth type

Letter Symbol	Tooth Type
F	Fine teeth
M	Medium teeth
C	Coarse teeth

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6.1.5 Symbol for shank diameter — Shall be the numerical value of the shank diameter in millimetres. Single digit numbers shall be preceded by a zero.

Example

Symbol for shank diameter 3 mm — 03

Symbol for shank diameter 6 mm — 06

6.1.6 Symbol for the shank length — Shall be the numerical value of the shank length in millimetres ignoring decimals.

6.2 Designation Code — Shall include six symbols, the last one being optional.

- 1) Letter symbol identifying the type of burr (*see* 6.1.1)
- 2) Number symbol identifying the cutting diameter (*see* 6.1.2)
- 3) Letter symbol identifying the tooth type (*see* 6.1.4)
- 4) Number symbol identifying the shank diameter (*see* 6.1.5)
- 5) Application range of carbide (*see* 3.2)

Example:

Designation code for cylindrical round (ball) nosed burr having cutting diameter 12 mm, medium type of teeth, shank diameter of 6 mm and application range of carbide K 10 shall be:

C 12 M 06 IS : 11943 (Part 1) K 10

EXPLANATORY NOTE

This standard covers the technical supply conditions of hard metal burrs. The different types of hard metal burrs are covered in Parts 2 to 12 of this standard.

In the preparation of this standard considerable help has been derived from ISO 7755/1—1984 'Hard metal burrs, Part 1 General specifications', issued by the International Organization for Standardization (ISO).